

REMARKS

Claims 27–39 are pending in this application. By this Amendment, the title is amended. Applicant respectfully requests reconsideration and prompt allowance in view of at least the following remarks.

Entry of the amendments is proper under 37 CFR §1.116 because the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issue requiring further search and/or consideration as the amendments amplify issues previously discussed throughout prosecution; (c) satisfy a requirement of form asserted in the previous Office Action; (d) do not present any additional claims; and (e) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

The courtesies extended to Applicant's representatives by Examiners Suitte and Yuan at the personal interview held February 25, 2009 are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicant's record of the interview.

The Office Action objects to the title for not being descriptive. As discussed during the February 25, 2009 personal interview, Applicant amends the title to recite "FUEL STACK STRUCTURE WITH AN ADHESIVE LAYER," which is sufficiently descriptive. Applicant respectfully requests withdrawal of the objection.

The Office Action rejects claims 27–31, 35, 38 and 39 under 35 U.S.C. §103(a) over U.S. Patent Application Publication No. 2001/0049047 (Mizuno). Applicant respectfully traverses the rejection.

Claim 27 recites "wherein the adhesive layer has a Young's modulus within the range of 30 MPa to 100 MPa." Applicant asserts that Mizuno fails to disclose or render obvious at

least this recitation. In fact, Mizuno teaches away from using an adhesive layer with a Young's modulus above 15 MPa.

As discussed during the interview, Fig. 8 of Mizuno does not explicitly disclose using an adhesive in fuel cells with a modulus of elasticity ranging between all of 2 to 50 MPa as alleged by the Office Action. Rather, Mizuno's Fig. 8 illustrates test results where a plurality of adhesives having different moduli of elasticity were prepared and applied to a joint body of an electrolyte film E joined to a carbon plate C (Mizuno at paragraph [0069]). Fig. 6 of Mizuno illustrates the joint body for measuring the 180-degree peeling strength with the adhesive layer B between the carbon plate C and the electrolyte film E. Mizuno is thus not attempting to use a modulus of elasticity ranging from all of 2 to 50 MPa, but is instead attempting to experimentally determine an ideal range that will eventually be used in a fuel cell.

Paragraph [0070] of Mizuno discusses the results of the test illustrated in Fig. 8, with the discussion in paragraph [0070] simply related to comparing the moduli of elasticity of the plurality of adhesives to the determined peeling strengths using the joint and testing machine. The peeling strength of an adhesive used in a fuel cell must be at least greater than 0.4 kg/cm (i.e., less than 15 MPa for the modulus of elasticity) because Mizuno discloses that peeling strengths equal to or less than this value (i.e., greater than 15 MPa) cause gas leaks and result in the poor reliability for the gas sealing property (Mizuno at paragraph [0064]).

Based on the foregoing, Fig. 8 is a plot used to determine which adhesive layers are acceptable for fuel cells based on comparing which adhesive layers have a peeling strength of at least 0.5 kg/cm or higher, and preferably 0.7 to 0.8 kg/cm or higher (Mizuno at paragraph [0070]). Because Mizuno does not disclose using adhesive layers with a moduli of elasticity ranging above 15 MPa in fuels cell, the Office Action has failed to establish a *prima facie* case of obviousness.

Further, as discussed above, Mizuno discloses that the peeling strength of an adhesive used in a fuel cell must be at least greater than 0.4 kg/cm because (Mizuno at paragraph [0064]). Additionally, Mizuno recites "the adhesive used for bonding the electrolyte film 21 to the separators 24 and 25 has the modulus of elasticity of not greater than 10 MPa or more preferably not greater than 5 MPa" (Mizuno at paragraph [0069]). Although Examiner Suitte alleged that this recitation merely recites one preferable embodiment, Mizuno explicitly recites "of not greater than 10 MPa" and not merely "of preferably no greater than 10 MPa." Mizuno also recites "[a]nother adhesive may, however, be used for the same purpose, as long as the adhesive has the modulus of elasticity of not greater than 10 MPa or more preferably not greater than 5 MPa after cure," (emphasis added) (Mizuno at paragraph [0078]). The discussion in paragraph [0078] does not merely discuss one embodiment, or one preferred embodiment, but explicitly discloses that the any adhesive used must have a modulus of elasticity of no greater than 10 MPa.

As asserted during the interview, based on the full disclosure, Mizuno clearly teaches away from the recitation "wherein the adhesive layer has a Young's modulus within the range of 30 MPa to 100 MPa," as recited in claim 27 because Mizuno stresses to not use an adhesive in a fuel cell with a modulus of elasticity greater than 10 MPa. It is also not reasonable to use a Young's modulus within the range of 30 MPa to 100 MPa because to do so improperly renders Mizuno unsatisfactory for its intended purpose. *See* MPEP §2143.01(V). Based on this reason, the Office Action failed to establish a *prima facie* case of obviousness. *See* MPEP §2141.02(VI).

Based on the foregoing, claim 27 is patentable over Mizuno. Additionally, claims 28–31, 35, 38 and 39 are also patentable, at least in view of the patentability of claim 27, from which they depend, as well as for the additional features the claims recite. Applicant respectfully requests withdrawal of the rejection.

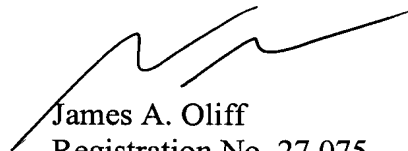
The Office Action rejects claims 32–34 under 35 U.S.C. §103(a) over Mizuno in view of U.S. Patent No. 6,316,139 (Uchida), and rejects claims 36 and 37 under 35 U.S.C. §103(a) over Mizuno in view of U.S. Patent Application Publication No. 2004/0142226 (Yamauchi). Applicant respectfully traverses the rejections.

These rejections are premised upon the presumption that Mizuno discloses or renders obvious all of the features of claim 27. Because, as discussed above, Mizuno does not disclose or suggest all of the features of claim 27, the rejection is improper. Applicant respectfully requests withdrawal of the rejections.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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